

# YEAR 2007



## PROGRESS REPORT OF ACTIVITIES

Issued March 2008     **James E. “Bud” Smith Plant Materials Center - Knox City, Texas**

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The USDA – Natural Resources Conservation Service (NRCS) James E. “Bud” Smith (JEBS) Plant Materials Center (PMC) located near Knox City, Texas, was established in 1965, and is one of 27 PMCs located throughout the United States. The center is responsible for developing conservation plants and cultural techniques for use within targeted Major Land Resource Areas (MLRA) in Texas, Oklahoma, Kansas, Colorado, and New Mexico.

The JEBS PMC serves all or portions of 136 counties in Texas that comprises parts of 25 MLRAs, and the area served in all or portions of 39 counties in southwestern Oklahoma comprising parts of thirteen MLRAs. The PMC also serves a portion of seven counties in southwestern Kansas including parts of four MLRAs, a portion of one county in the southeastern corner of Colorado comprising parts of three MLRAs, and a portion of seven counties in eastern New Mexico comprising parts of seven MLRAs.

The PMC is located approximately four and a half miles northwest of Knox City, Texas, in the Rolling Red Plains Major Land Resource Area.

The mission of the Plant Materials Program is to develop and transfer effective state-of-the-art plant science technology to meet customer and resource needs. Plant and technology development objectives of the PMC include:

- Erosion Control - wind and water
- Range and Pasture Improvement
- Wildlife Habitat Improvement
- Water Quality Improvement on Agricultural Land

Following are highlights of some of the activities of the PMC for 2007. Please contact the PMC for more detailed information.

### ***New Manager at the NRCS/James E. “Bud” Smith Plant Materials Center***

Raymond T. Cragar has returned to the plant materials world. At one time, he was the assistant manager at the JEBS PMC

Ray’s hometown is Hobart, Oklahoma. He graduated from Tarleton State University – Stephenville, Texas, with a Bachelor of Science in Agriculture (Animal Production) in 1981.

Following graduation, Ray worked for TABY County Enterprises in Olney, Texas as assistant manager of a feed store/grain elevator/feed mill. He then joined the USDA – Soil Conservation Service (SCS), now Natural Resources Conservation Service (NRCS), as a soil conservationist trainee in Coleman, Texas. Not long afterwards he became a soil conservationist in Waxahachie, Texas. In 1984, Ray became assistant manager at the James E. “Bud” Smith Plant Materials Center. In 1994, he became manager of the PMC in Quicksand, Kentucky, which later moved to Alderson, West Virginia.

After leaving the NRCS in 1997, he worked for the Texas Forest Service as a silviculturist (field nursery manager/stewardship coordinator) at the West Texas Nursery near Lubbock, Texas. After gaining experience growing and planting windbreak trees in the Southern High Plains region of west Texas, Ray returned to the NRCS in 2004 as an area grassland specialist in Philippi, West Virginia.

In April, 2007 Ray returned to the JEBS PMC as manager.

## ***Evaluating Warm Season Grasses for Biofuel and Biomass Yield***

In the spring of 2007, replicated plots of six warm-season perennial grasses were established with rhizomes or seed at the JEBS PMC.



***First Year Plots in October***

Five native species, ('Earl' big bluestem, 'Kanlow' switchgrass, 'Lometa' Indiangrass, 9083274 big bluestem, and 'Alamo' switchgrass) were seeded at the rate of 40 pure live seed per row foot with a Planet Jr. (one row push planter). Rhizomes of miscanthus were planted three feet apart. Irrigation was applied as needed during the establishment year only.

All six plant species were replicated four times in a Randomized Complete Block Design. These cultivars/selections of warm-season grasses will be evaluated in the fall, winter and early spring to determine dry matter production and biofuel quality.

After plant establishment in 2007 the first harvest will be made in 2008 at seed maturation, and then every 6 weeks thereafter for a total of 5 harvests per growing season, for the next three years. Each block is 18 feet by 20 feet and consists of 7 rows, with the outside rows serving as borders. Biomass will be harvested from a single row and yield determined from a 14.5 foot section harvested from the center of each row.

This study is in cooperation with the USDA-NRCS Technical Center, Fort Worth, Texas; USDA-ARS,

Temple, Texas; Mississippi State University, Starkville, Mississippi; and the USDA-NRCS PMC in Elsberry, Missouri.

## ***Tours Hosted By the Plant Materials Center***



***Ray Cragar, PMC Manager, welcomes the Clear Fork Youth Range Group***

Two tours were conducted by the PMC staff during 2007: thirty students with their adult leaders from the Clear Fork Youth Range Group in July, and seventeen cattlemen with the Kentucky Beef Producers Association in November.

The Clear Fork Youth Range Group and Kentucky Beef Producers toured the PMC and learned about the Plant Materials Program. They learned our mission is to develop and transfer effective state-of-the-art plant sciences technology to meet customer and resource needs.

## ***Seed Production***

The JEBS PMC maintains large scale Foundation/Germplasm Select seed production of the following cultivars and germplasm:

- 'Haskell' sideoats grama
- 'Premier' sideoats grama
- 'Sabine' Illinois bundleflower
- 'Alamo' switchgrass
- 'Plateau' awnless bushsunflower
- 'Eldorado' Engelmann daisy
- 'Lometa' Indiangrass
- San Marcos Germplasm eastern gamagrass
- OK Select Germplasm little bluestem
- Cottle County Germplasm sand bluestem

Seed of these and others is available from the Texas Foundation Seed Service near Vernon, Texas. The website is <http://tfss.tamu.edu> or call (940) 552-6226 for more information.

### ***Observational Plantings for Future Cultivar Releases***

Observational plantings are conducted to determine the potential area of adaptation of an accession(s) selected from initial evaluation or advanced evaluation plantings. These plantings are also recommended for determining the potential area of adaptation and future use of prevarietal releases beyond the originating PMC service area. Generally, observational plantings consist of non-replicated, single rows or plots planted at other PMCs in the region with a standard of comparison, if one is available. Plants are evaluated for their adaptation and performance over a given number of years (e.g. 3 to 10 years) depending on the type of plant material and objective of the planting.

In 2007 the NRCS/JEBS PMC evaluated three accessions of blue grama from the Manhattan, Kansas PMC; one accession of big sacaton from Los Lunas, New Mexico PMC; and one select type called Lavaca Germplasm Canada wildrye from the Kika de la Garza PMC in Kingsville, Texas.

### **NRCS/ James E. “Bud” Smith PMC Personnel**

- Raymond T. Cragar - Manager
- Rudy G. Esquivel - Soil Conservationist
- Ronald L. Curd – Biological Science Technician
- Mark S. Bennett - Biological Science Aid (part-time, summer only)

**Plant Materials Program Web site:**

**[Plant-Materials.nrcs.usda.gov](http://Plant-Materials.nrcs.usda.gov)**

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